Table 2.2-8
RAO 5 PRG Derivation
Portland Harbor Superfund Site
Portland, Oregon

COCs	Units	RAO 5 Reduce risk to ecological receptors from ingestions of and direct contact with contaminated sediments and riverbank soils by reducing the concentrations of COCs in sediment at the site to the proposed remediation goals.			
		Sediment			
		Risk-based PRG (HQ=1)	ARAR	Background	PRG
Arsenic	mg/kg	33	NA	3	33
Cadmium	mg/kg	5	NA	0.12	5
Chromium	mg/kg	111	NA	24	111
Copper	mg/kg	149	NA	26	149
Lead	mg/kg	128	NA	7.7	128
Mercury	mg/kg	1.1	NA	0.034	1.1
Zinc	mg/kg	459	NA	77	459
Chlordanes	µg/kg	18	NA	0.4	18
DDE	µg/kg	31	NA	NA	31
DDx	µg/kg	63	NA	2	63
Dieldrin	µg/kg	62	NA	NA	62
gamma-Hexachlorocyclohexane	µg/kg	5	NA	NA	5
Bis-2-Ethylhexylphthalate	µg/kg	135	NA	61	135
Total PCBs	µg/kg	64	NA	6	64
Total PAH	µg/kg	23,000	NA	73	23,000
Total LPAH	µg/kg	1,500	NA	NA	1,500
Total HPAH	µg/kg-%fines	150,000	NA	NA	150,000
TPH (C-10 to C-12 aliphatic)	µg/kg	3,900	NA	NA	3,900
TPH (C-10 to C-12 aromatic)	µg/kg	11,000	NA	NA	11,000
Tributyltin	mg/kg	3.1	NA	NA	3.1
Benthic Toxicity		Maximum allowable survival or biomass reduction (see Note 1)			

Notes:

NA - Not applicable

1 - Benthic Toxicity Narrative Requirement:

Chironomus dilutus 10-day survival: survival > 84%

Chironomus dilutus 10-day biomass: biomass > 82% of the laboratory negative control biomass

Hyalella azteca 28-day survival: survival > 79%

Hyalella azteca 28-day biomass: biomass > 66% of the laboratory negative control biomass

In addition to having survival or biomass values lower than the above PRG percentages, each individual sample with survival or biomass lower than its respective PRGs must have survival or biomass statistically significantly lower than that of the laboratory negative control sediment response, as determined using either a one-tailed parametric t-test, or a one-tailed non-parametric Mann-Whitney U test (sometimes referred to as the Wilcoxon rank sum test or WRS test, either name is fine), with a statistical significance level of $p < 0.05$. Survival/biomass and statistical significance tests must both fail before an individual sample is considered to have exceeded a toxicity based PRG.